

Claims:

Sub A1 1. An enterprise optimized hand-off control wireless code division multiple access, CDMA, communication system, comprising:

a local area network, LAN, having an ethernet communication back-bone;

a plurality of CDMA wireless base stations coupled to said ethernet communication back-bone;

a plurality of extended antenna units coupled to said CDMA wireless base station;

a communication path coupled to said ethernet communication back-bone;

a signal distribution concentration unit coupled to said base station;

and

a delay circuit unit coupled to said antenna unit.

2. The system as recited in Claim 1, wherein said delay circuit unit includes a plurality of delay elements for delaying signals transmitted via the communication path to external wireless communication devices within the enterprise wireless communication system.

Sub A1 3. The system of claim 1, wherein said delay circuit unit comprises a signal transmit distribution subsystem unit coupled to distribute communication signal received by the delay circuit unit within the enterprise wireless communication system to said extended antenna units.

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4. The system of claim 1, wherein said delay circuit unit further comprises a signal receive concentration subsystem coupled to receive communication signals generated by communication devices within the enterprise wireless communication system, said receive concentration subsystem transmitting said communication signals.

5. The system of claim 3, wherein said transmit distribution subsystem comprises a plurality of signal transmit delay elements coupled to a signal dividing unit.

6. The system of Claim 4, wherein said receive concentration subsystem comprises a plurality of signal receive elements coupled to a signal combining unit.

7. The system of Claim 1, wherein said base stations include a user location determination logic for determining a location of a mobile communication user within the enterprise communication system.

8. The system of Claim 5, wherein said delay circuit unit further comprises delay signal strength detection logic for determining which delayed signal received by the delay circuit unit must be transmitted to a receiving target mobile communication device within the enterprise communication system .

9. An integrated enterprise Code Division Multiple Access, CDMA, wireless base station comprising:

a sectorized base station controller coupled to control communication between the base station and mobile communication units within an identified geographical sector within a building;

an extended antenna unit;

a signal distribution concentration unit; and

a delay element unit.

10. The base station of claim 9, wherein said delay element units are daisy-chained to said extended antenna unit.

11. The base station of claim 9, wherein said delay element units are star-chained to said extended antenna unit.

12. The base station of claim 9, wherein said distribution concentration unit comprises a handoff control logic for handling signal handoffs between the base station and a macro system.

13. The base station of claim 12, wherein said handoff control logic further includes transition logic for providing handoffs within a hand-off transition area.

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14. The base station of claim 9, wherein said distribution concentration unit further comprises a pilot strength measurement message adaptable for reporting timely handoffs between the base station and a macro system.

15. An enterprise wireless communication system, comprising:
- a plurality of base stations;
 - a plurality of antennas distributed in predetermined regions within the enterprise system;
 - a plurality of delay elements coupled to said plurality of base stations;
 - a plurality of mobile communication units; and
 - a designated handoff transition region for enabling the mobile communications units communicate with an external public communication system.
16. The system of claim 15, wherein the base stations comprise location identification logic for identifying the location of each of the mobile communication units within the enterprise system.
17. The system of claim 15, wherein said base stations further comprise time delay detection logic for detecting the duration of time delays of the delay elements.
18. The system of claim 15, wherein said delay elements are inserted into a communication path between said base stations and said mobile communication units.
19. The system of claim 15, wherein said base stations are coupled to receive a combined code division multiple access (CDMA) signal

received from multiple CDMA signals transmitted from the mobile communication units via said antennas.

20. The system of claim 15, wherein said handoff requests between the mobile communication units and the base stations can only occur in said handoff transition region.

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